



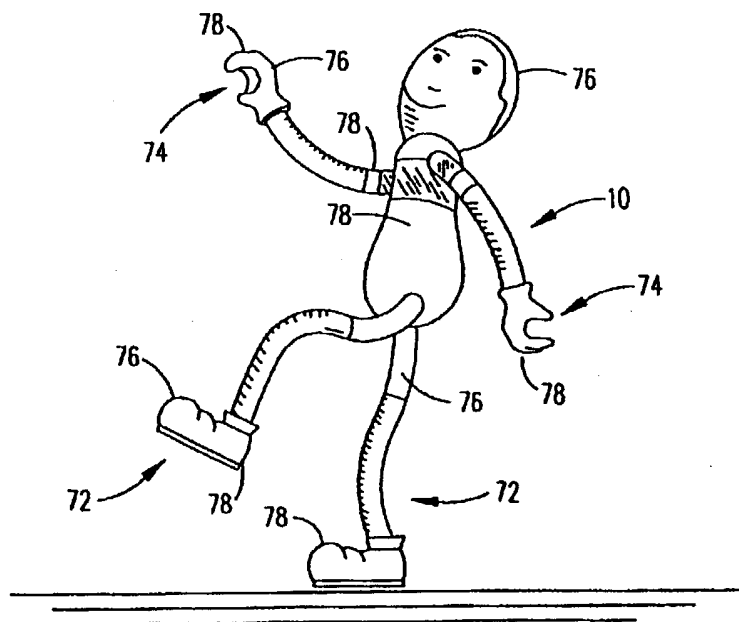
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<p>(21) International Application Number: PCT/US98/08237 (22) International Filing Date: 23 April 1998 (23.04.98) (30) Priority Data: 08/852,518 7 May 1997 (07.05.97) US (71) Applicant: HEARTHSONG, INC. [US/US]; 170 Professional Center Drive, Rohnert Park, CA 94928-2149 (US). (72) Inventors: KANE, Barbara; 2211 Blucher Valley Road, Sebastopol, CA 95472 (US). SIDOLI, Nathan; 2211 Blucher Valley Road, Sebastopol, CA 95472 (US). WINKLER, James, P.; 323 Whites Landing, Long Beach, CA 90803 (US). CASE, Ryan; 11698 Graton Road, Sebastopol, CA 95472 (US). (74) Agent: KEPLER, John, W., III; Suelthaus & Walsh P.C., 12th floor, 7733 Forsyth Boulevard, Clayton, MO 63105 (US).</p>		<p>(81) Designated States: CA, CN, DE (Utility model), JP, KR, MX, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published With international search report.</p>

(54) Title: POSEABLE TOY FIGURE AND ACCESSORIES

(57) Abstract

A poseable toy figurine (10), preferably representing a human or human-like figure, capable of being manipulated into a variety of poses or positions. The poseable toy figurine having portions (12) which when manipulated into an intended position has little or no tendency to return to its previous positions and other portions (74) which when manipulated into a position other than the as-molded position tends to return to the as-molded position after being released. These other portions providing inherent grasping and holding capability for objects (80) of a predetermined size which is complimentary with the as-molded position. The poseable toy figure provided in combination with accessories having at least one dimension of the predetermined size.



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POSEABLE TOY FIGURE AND ACCESSORIES

BACKGROUND OF THE INVENTION

The present invention relates in general to toy figures and pertains, more particularly, to a poseable toy representing a human-like figure which can be manipulated into a variety of poses or positions. The poseable toy figure of this invention is an improvement over conventional poseable toy figures and incorporates magnetic material and graspable extremities.

With conventional toy figures construction is generally based upon some sort of an internal frame and covering material. The internal frame is often made of a single unitary armature and the covering is either a bendable or flexible material laid onto the internal frame or an outer a generally flexible outer covering having an inner stuffing material located around the internal frame, if one is provided.

A drawback associated with the conventional toys, whether made of bendable material or a stuffed outer covering, is the relatively limited range of movement available. With conventional toy figures utilizing an internal frame and bendable or stuffed covering it is generally necessary to design and construct an internal frame that maximizes the degree of articulation obtained by each limb due to movement of the internal frame.

Moving the limbs causes movement of the internal frame. In some conventional figures the limbs and internal frame are moved to a set position thereby enabling the toy to be posed in a predetermined shape with little or no tendency to return to its previous position.

Conventional toy figures with the internal frame configuration can be covered with a variety of materials. Often the choice of a covering is dictated by the desired or intended style of articulation.

Other conventional toy figures utilize a single unitary armature that consists of a plastic material. In these embodiments of the conventional toy the figure's limbs and extremities yield with relatively little force and are sufficiently elastic such that they tend to return to a previous position after manipulating the toy into the intended pose or position.

Another drawback associated with conventional poseable toy figures is the general inability to bend the internal frame structure repeatedly without fatiguing the internal frame structure material. When this drawback is overcome it is often at the cost of the range of movement and flexibility of the poses obtainable by the toy.

When internal frame fatigue is a concern, the conventional toy figures are often limited

to poses that are essentially, simply draping or tying the limbs or the head of the toy figure to an associated structure. With this type of figure it may not be possible to pose the toy independent of a permanent stand or associated structure over which the toy may be draped.

While this drawback by itself may not be considered initially a significant problem, the result is that the toy is relatively useless for interaction with any other toy or accessory and is used by itself. Thus, the toy does not lend itself to use with accessories or in any life-like arrangement that may tend to increase the toy's desirability.

Other drawbacks are associated with more complex toys in which attempts have been made to incorporate duplications or simulations of actual joints, for example, knees and ankles. Among conventional toys and dolls it is known to use hinged or pivoting members, ball and socket arrangements or twisted strands of wire that could result in a toy that has a limited lifetime due to the complicated internal structures incorporated into the internal framework of the toy.

Although conventional stuffed dolls may be provided with an internal framework it is often necessary to limit the extent to which the internal framework extends through the toy's extremities. Since the internal framework, often by necessity, does not extend to the ends of the limbs or into the hands and feet or into the head, the toy has a limited ability to pose and will not have sufficient internal structure so as to enable the ends of the toy's extremities to be used in posing or grasping or interacting with any accessories.

Accordingly, it is an object of the present invention to provide an improved poseable toy figure utilizing an internal frame construction in combination with a specifically designed covering or cladding having shape memory. The covering or cladding is preferably supported by or proximate to the internal frame construction and in one preferred embodiment of the present invention a portion of the toy not supported by the internal frame construction can be constructed such that it returns to or at least near its previous position after manipulation.

Another object of the present invention is to provide an improved poseable toy figure in which the ends of at least the upper extremities are provided with a capability of holding or grasping objects. In this way there is provided a means for interacting with one or more complementary accessories.

A further object of the present invention is to provide an improved poseable toy which is capable of standing generally upright (subject to the location of the center of gravity of the poseable toy in the desired pose) on a surface that can range from non-vertical to horizontal

and therebetween. This allows use of the poseable toy figure without the need for external supports to maintain the toy figure in a generally upright position either during use or during storage.

Still another object of the present invention is to provide an improved poseable toy that is capable of being magnetically attached to a metallic surface subject to the pose in which the toy is positioned. The capability of magnetic attachment is accomplished by providing one or more magnets in an assembly that may be incorporated into the construction of the foot portions of the lower extremities or the limbs.

Still a further object of the present invention is to provide an improved poseable toy which utilizes magnets with different polarities. In this way, one poseable toy is capable of being either attracted to or repelled by another poseable toy to magnetically connect the toys to each other or around a supporting structure depending upon the combination of magnetic polarities provided in any given poseable toy.

Another object of the present invention is to provide an improved poseable toy in which the shape and features of the internal frame and covering or cladding are either gender neutral or include markings suggestive of gender, occupation, and/or avocation. The present invention, in combination with at least one accessory, complements the use of a single toy or a plurality of toys in such a way as to represent one or more occupations, thereby enhancing the desirability of the toy as a vehicle for play and role playing.

A further object of the present invention is to provide an improved poseable toy that is adapted for use either alone or in combination with other toys, whether or not of style or form of the present invention. The poseable toy of the present invention is characterized by a poseable construction, a grasping construction, a magnetically supporting construction having a range of uses as a single toy or in combination with other toys or in combination with one or more accessories or in any combination of these features.

SUMMARY OF THE INVENTION

To accomplish the foregoing and other objects of this invention there is provided a poseable toy for manipulating the toy into a variety of poses or positions with magnetic material inserted into the toy for interaction with metallic material, for example, steel. The poseable toy figure includes means for articulating the figure into desired poses or positions embedded within a suitable bendable covering material or cladding and provided with means for supporting the toy figure without an external support or magnetically and means for

grasping objects separable both from the toy figure and the means for grasping objects.

The poseable figure includes means for articulating the toy figure, means for covering or cladding the means for articulating the toy figure, means for grasping whereby the toy figure can grasp objects of a predetermined size, means for stabilizing the toy figure whereby the toy figure can stand on a surface that can range from non-vertical to horizontal depending upon the location of the center of gravity of the toy figure **10** for the particular pose relative to the means for stabilizing, and means for securing the toy figure whereby the toy figure can be removably attached to a surface of a metallic material. The orientation of the surface of the metallic material can range from vertical to horizontal and from right side up to upside down.

In a preferred embodiment, the poseable toy figure has markings suggestive of gender and occupation or avocation. In a preferred embodiment the poseable toy figure is provided in combination with one or more accessories, suggestive of the occupation or avocation whereby at least one accessory has at least one dimension of a predetermined size such that the accessory so sized is graspable with the means for grasping incorporated into the toy figure.

These and other objects and features of the present invention will be better understood and appreciated from the following detailed description of embodiments thereof, selected for purposes of illustration and shown in the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front view of means for articulating a poseable toy figure of the present invention;

FIG. 2 is a front view of the poseable figure illustrating both the means for articulating and means for covering or cladding the means for articulating;

FIG. 3 is a bottom view illustrating a recessed area of a bottom surface of one foot portion;

FIG. 4 is a cross-sectional view taken along line 4-4 in **FIG. 3**;

FIG. 5 is a cross-sectional view taken along line 5-5 in **FIG. 3**;

FIG. 6 is a bottom view illustrating a means for securing located generally within the recessed area of the bottom surface of the foot portion;

FIG. 7 is a cross-sectional view taken along line 7-7 in **FIG. 6**;

FIG. 8 is a cross-sectional view taken along line 8-8 in **FIG. 6**;

FIG. 9 is a bottom view of one of the means for securing illustrating a magnet in combination with a sheet metal bracket;

FIG. 10 is a top view of the means for securing depicted in **FIG. 9**;

FIG. 11 is an end view of the means for securing depicted in **FIG. 9**;

FIG. 12 is a side view of the means for grasping the poseable toy figure;

FIG. 13 is a perspective view of a stretcher provided as part of a firefighter set of accessories;

FIG. 14 is a perspective view of a safety net provided as part of a firefighter set of accessories;

FIG. 15 is a perspective view of a ladder provided as part of a firefighter set of accessories;

FIG. 16 is a perspective view of a firetower provided in combination with a cord as part of a firefighter set of accessories;

FIG. 17 is a perspective view of a firehose provided as part of a firefighter set of accessories;

FIG. 18 is a perspective view of a firefighter hat provided as part of a firefighter set of accessories;

FIG. 19 is a perspective view of a trapeze bar in combination with a cord, a magnet with a hook, and a disk provided as part of a mountaineer set of accessories;

FIG. 20 is a perspective view of a suction cup and hook provided as part of a mountaineer set of accessories;

FIG. 21 is a perspective view of a gondola/cable car in combination with a pulley support assembly provided as part of a mountaineer set of accessories;

FIG. 22 is a perspective view of a drawstring bag accessory;

FIG. 23 is a perspective view of a baseball-style cap accessory;

FIG. 24 is a perspective view of two firefighter ladders illustrating sleeves for connecting two or more ladders and angled magnets to support the ladders on a metallic surface;

FIGS. 25 through 32 illustrate the poseable toy of the present invention in various poses and interacting with representative accessories; and

FIG. 33 is a cross-sectional view of a preferred embodiment of a foot assembly illustrating the relationship between a foot portion of the toy and a bracket within the foot portion and a magnet located within the bracket.

DETAILED DESCRIPTION

Referring now to the drawings there is shown a preferred embodiment of the poseable toy figure of this invention. The toy figure is described in use by itself and in combination with one or more accessories intended to enhance the enjoyment of using the poseable toy.

The poseable toy figure of the present invention is particularly adapted for use by itself, or in combination with a surface of a metallic material or one or more accessories. The present invention is characterized by an improved ability to pose, magnet attachment to a metallic material and the ability to grasp accessory objects or supports of a suitable size.

The drawings show the poseable toy figure 10 in conjunction with accessories and the magnetic material and the grasping construction both of which are associated with the internal framework and the extremities of the toy figure. The toy figure includes means for articulating the toy figure 12 and means for covering or cladding the toy figure 28 that encloses the means for articulating the toy figure 12.

Means for grasping 74 are provided for the poseable toy figure 10. The means for grasping enables the poseable toy figure 10 to grasp objects of a predetermined size and, preferably, the accessories illustrated in the drawing figures and described below in more detail.

Means for stabilizing the toy figure 72 enable the poseable figure 10 to stand on a surface having an orientation that ranges from non-vertical to horizontal and therebetween. Means for securing the toy figure 70 provide the capability of allowing the poseable figure 10 to be removably attached to a surface, even a surface that is not horizontal, even a vertical surface of a metallic material even while extending out from the vertical surface or a upside down and extending downward from the bottom of a horizontal surface.

FIG. 1 illustrates a preferred means for articulating the toy figure 12, and includes an internal framework for supporting the toy figure, a covering or cladding material and the means for grasping and the means for supporting the toy figure. In a preferred embodiment a wire armature 14 provides the internal framework.

The illustrated wire armature has a body portion 16 and a combination neck and head portion 18. The neck and head portion of the illustrated preferred embodiment is rigidly connected to the body portion 16.

The illustrated wire armature has a first arm and hand portion 20 and a second arm and hand portion 22. The arm and hand portions 20, 22 of the illustrated preferred embodiment are rigidly connected to the body portion 16.

The illustrated wire armature has a first leg and foot portion 24 and a second leg and foot portion 26. The leg and foot portions 24, 26 of the illustrated preferred embodiment are rigidly connected to the body portion 16.

In a preferred embodiment illustrated in the drawing figures a preassembled fabricated wire armature 14 is illustrated. It will be understood that other internal frameworks may be constructed for use in the toy of the present invention.

The means for covering or cladding the toy 28 is illustrated, for example, in FIG. 2. The means for covering or cladding the toy includes a skin made of a material having a "shape memory."

In a preferred embodiment, the means for covering or cladding the toy 10 is a one piece injection molded plastic skin 30 incorporating the desired "shape memory." In a preferred embodiment the means for covering or cladding the toy 28 is selected from a material that is sufficiently inelastic so as to return to its previous position after manipulation unless the movement is resisted by the wire armature 14 of the internal framework providing the means for articulating the toy 12.

In one preferred embodiment the one piece injection molded plastic skin 30 has a body portion 32, a neck portion 34, a head portion 36, a first arm portion 38 and a second arm portion 44, a first and second sculptured hand portions 40 and 46. The first and second sculptured hand portions 40, 46 include first grasping fingers 42 and second grasping fingers 48.

The injected molded plastic skin 30 has a first leg portion 50, a first foot portion 52 further having a bottom surface 54 with a recessed area 56 as illustrated in FIG. 3 through 5, a second leg portion 60, a second foot portion 62 further having a bottom surface 64 with a recessed area 66. The construction of a typical foot portion will be described in further detail.

In a preferred embodiment the means for grasping 74 includes at least one sculptured hand incorporating fingers, as illustrated in FIG. 12. The means for grasping provides for the sculptured hand to be first flexed open and then released.

The grasping feature of the sculptured hand of the preferred embodiment allows the finger or fingers to return to the pre-flexed and molded position after release. This allows the finger or fingers to grasp and hold objects.

It will be recognized that the means for grasping is preferably associated with an accessory of a pre-determined size in order to enhance use of the means for grasping. The

finger or fingers return to the molded position due to the "shape memory" property of the molded plastic skin 30 and that the means for articulating 12 does not extend into the means for grasping, for example the finger or fingers portion of the sculptured hand.

The means for grasping 74 can also operate through cooperation with or be considered to include both the first grasping fingers 42 of the first sculptured hand portion 40 of the one piece injection molded plastic skin 30 and the second grasping fingers 48 of the second sculptured hand portion 46 since both can be manipulated in concert to grasp an object or structure. It will be understood that since neither the first arm and hand portion 20 nor the second arm and hand portion 22 of the wire armature 14 extends into the grasping fingers 42, 48, therefore neither the first grasping fingers 42 or the second grasping fingers 48 of the means for covering or cladding 28 enclose any portion of the wire armature 14 comprising the means for articulating 12.

The means for stabilizing 72, as shown in FIGS. 3 through 11, includes a first foot portion 52 and a second foot portion 62 formed by the means for covering or cladding 28. Both the first foot portion 52 and the second foot portion 62 are constructed so as to provide sufficient surface area such that the poseable toy figure 10 is capable of being stood upright on a surface that is orientated from non-vertical to horizontal as long as the center of gravity of the posed toy is within a range supportable by the location of the means for stabilizing, that is, the two foot portions of the toy with their toy supporting surface area.

It will be further understood that the means for stabilizing can also be considered to include both the first foot portion 52 and the second foot portion 62 formed by the means for covering or cladding 28 in combination with the first leg and foot portion 24 and the second leg and foot portion 26. These portions of the toy 10 in concert with the means for articulating the toy 12 provide for manipulating the poseable toy 10 into a position or positions whereby the toy balances on the support surface and, therefore, capable of standing upon the surface that ranges from non-vertical to horizontal without a stand or other external support so long as the toy is posed to maintain its center of gravity relative to the means for stabilizing.

The means for securing 70 the toy 10 as discussed briefly above, includes a plurality of magnetic material associated with one or more of the extremities of the present invention. In a preferred embodiment the magnetic material includes a first magnet 58 and a second magnet 68 as shown in FIGs. 7 and 8. Foot portions 52 and 62 are shown in the same drawing figure for purposes of clarity as it usually would be desirable, although not necessary, to manufacture the

toy of the present invention with identical foot portions.

Referring now to the first magnet 58, as exemplary of both magnets 58 and 68, the first magnet 58 is positioned within the recessed area 56 located in the bottom surface 54 of the first foot portion 52. The second magnet 68 is positioned within the recessed area 66 located in the bottom surface 64 of its respective foot portion 62.

The attractive force of the magnet or magnets may vary, however, it is desired to have at least one magnet capable of assisting support of the toy 10. In a preferred embodiment either the first magnet 58 or the second magnet 68 or both have the capability of magnetically attaching the poseable toy figure 10 to a vertical metallic surface or upside down from a horizontal metallic surface while supporting the weight of at least one other toy figure 10.

It may be preferred to provide two magnets, one in each of the foot portions, which have opposite magnetic polarity. In this instance the first foot portion will be attracted to the second foot portion.

If this embodiment is utilized, then the respective foot portions will be attracted to each other. In this embodiment the legs of the toy 10 can be wrapped or otherwise placed around an object, such as supporting structure or an accessory, and the attraction of the magnets in the foot portions will maintain an attachment between these foot portions.

It may be preferred to provide two or more toys 10 with foot portions having magnets with the same magnetic polarity, for example, the magnet or magnets in one toy positive and the magnet or magnets in the other toy negative. In this embodiment one poseable toy 10 will be either magnetically attracted to or magnetically repelled by the magnet or magnets in the foot portions of the other poseable toy and pairs of toys will maintain a magnetic attachment by utilizing means for attaching that includes a magnet or magnets in the foot or feet portions of the other toy.

The toy 10 further includes means for positioning and holding the means for attaching in the desired location or locations relative to the poseable toy 10. The means for positioning and holding positions and holds the means for attaching with a force sufficient to resist any separation force that develops, for example due to the weight of the toy, or an accessory, or a combination of toys, accessories or the like, that develops between the means for attaching and the surface to which the means for attaching the toy is attached.

In the embodiment of the present invention in which a magnet or magnets are placed in a foot or the feet portions of the toy 10, the means for positioning and holding positions and

holds the magnet or magnets in place with a force that is sufficient to resist a magnetic force between the magnet or magnets and a metallic surface to which the toy is attached such that the magnet or magnets are not pulled from their positions within the cavity formed in the foot. This positioning and holding force can be developed in any suitable way, for example, by applying an adhesive to the magnet or crimping a magnet holding bracket so as to secure the magnet in place within the bracket.

In a preferred embodiment the positioning and holding force is developed by means for providing a mechanical attachment between the magnetic means for attaching and the associated portion of the means for covering or cladding the internal framework of the toy 10. In this preferred embodiment, the means for securing includes first and second brackets 59 and 69 in the respective foot portions 52, 62.

In the preferred embodiment illustrated in the drawing figures the first magnet 58 is held in place in combination with a first sheet metal bracket 59, and the second magnet 68 is held in place in combination with a second sheet metal bracket 69. The magnet and sheet metal bracket combination are positioned within the recessed area of the bottom surface of the respective foot portion.

The present invention is intended to provide a poseable toy. It is also intended to enhance the appeal of the toy by providing means for identifying with the toy and means for conducting "play sessions" by providing at least one accessory intended for use with the toy of the present invention.

In a preferred embodiment the poseable toy figure 10 includes one or more markings 76. These markings 76 include means for representing pigment, hair and clothing on the surface of the means for covering or cladding the internal framework. The means for representing pigment and clothing may be applied to suggest features including but not limited to those of gender, occupation and avocation.

The drawings include illustrations of the means for representing pigment and clothing 78, for example, to distinguish gender or occupation or avocation. In one preferred embodiment the poseable toy figures 10 have the same human-like shape with no gender distinctions other than neutral external markings.

A preferred embodiment of the present invention includes the combination of the poseable figure 10 and one or more accessories 80. This embodiment of the present invention includes one or more poseable toys 10 and one or more accessories.

The combination of poseable figure or figures 10 and one accessory or a set of accessories is possible. In order to provide the desired interaction between the toy or toys 10 and an accessory or a plurality of accessories 80 the means for grasping and the preferred accessories have a member or portion 82 that has a predetermined dimension.

The means for grasping is capable of grasping the pre-determined dimension portion 82. In a preferred embodiment the pre-determined dimension portion 82 is held by either the first grasping fingers 42 or the second grasping fingers 48 or both.

The accessory sets and the corresponding accessories 80 compliment the gender, occupations and avocations suggested by the particular means for representing pigment and clothing. These external markings 76 associated with the poseable figure or figures 10 and the accessory or accessories operate in concert to allow their use to stimulate imagination and curiosity by suggesting the creation of a variety of imaginative play environments with the toys and accessories providing the stimulation to continue the play.

In a preferred embodiment illustrated in the drawing figures, an accessory set is based on the occupations of firefighters and emergency medical personnel. This firefighter accessory set typically comprises three (3) poseable figures 10 with means for representing figures of both genders and different ethnic backgrounds as firefighters.

In the drawing figures each toy is illustrated to suggested that each toy has painted features 78 suggestive of firefighters and one (1) poseable figure 10 has painted features 78 suggestive of an emergency medical technician in combination with one or more accessories 80, preferably firefighter accessories 84.

In the illustrated embodiment the firefighter accessory set includes a variety of firefighter related accessories 84. In the embodiment of the present invention illustrated in the drawing figures there is a stretcher or stretchers 86 incorporating a stretcher carrying platform 114 supported by two rods 116 providing the desired members 82 with the desired diameter suitable for grasping by the means for grasping.

A safety net 88 is provided to represent a typical safety net or trampoline associated with the type of safety equipment often associated with firefighters and used by firefighters for rescuing those trapped in burning buildings, and more particularly, associated with firefighters by children who it is believed will enjoy using the present poseable toy figure 10 in its firefighter embodiment. In the embodiment of the accessory illustrated in the drawing figures the safety net 88 includes safety net surface 118 supported by a safety net surface support

structure 120.

The safety net surface support structure 120 provides the members 82 with the desired diameter suitable for grasping by the means for grasping. In one preferred embodiment the safety net surface support structure has a diameter of approximately .1875 inches.

A ladder 90 is provided to represent a fireman's ladder. In the embodiment of the accessory illustrated in the drawing figure the fireman's ladder 90 includes rungs 122 and supports 124 for the rungs.

Both the rungs 122 and the rung supports provide the members 82 sized for use in concert with the means for grasping associated with the toy 10. In one preferred embodiment the rungs and the rung supports both have a diameter of approximately .1875 inches.

A fire tower 92 is provided as another of the preferred embodiments and is illustrated in the drawing figures. The fire tower includes a platform 126 supported by a platform support structure 128 and associated means for securing the platform support structure preferably magnets 130 as illustrated in the drawing figures for one preferred embodiment of the fire tower 92.

A secondary support member 132 is provided with a supporting end 134 and a hooked end 136. A cord 138 or cords may be attached to the hooked end as illustrated in the drawings.

Another means for securing the fire tower is associated with the secondary support member 132. In the preferred embodiment illustrated in the drawing figures the means for securing the fire tower is also a magnet 130.

The fire tower and secondary support members provide the members 82 for use with the means for grasping of the poseable toy 10. In one preferred embodiment the fire tower and secondary support members have a diameter of approximately .1875 inches.

Another accessory is illustrated as a fire hose or fire hoses 94. Each fire hose has a nozzle end 140 and supply end 142. The fire hose is intended to cooperate with the means for grasping and, therefore, provides the member 82 for the accessory and is approximately .1875 inches in diameter in a preferred embodiment.

As previously mentioned the toy 10 and the means for covering or cladding the framework includes means for representing pigment and clothing. Separably firefighter hats 96 may be provided to complete the uniform and sized to fit snugly, but not permanently, upon the top of the head portion 36.

In another preferred embodiment of the combination of the poseable toy 10 and an accessory set each accessory and the plurality of accessories represent the recreational activity of one or more mountain climbers or mountaineers. An accessory set representing a preferred embodiment of the present invention may include, for example, four (4) poseable figures 10 with means for representing figures of both genders and different ethnic backgrounds as mountain climbers or mountaineers and the preferred embodiment of the accessories for use with the poseable toy 10 include one or more accessories 80, preferably accessories 98 that suggest the sport of mountain climbing or mountaineering.

A mountain climber's trapeze set 100 is provided to suggest and represent climbing equipment suitable for use with the poseable toy 10 of the present invention. In the embodiment of the accessories associated with the sport of mountain climbing the mountain climber's trapeze 100 includes a trapeze bar 144 supported by a flexible trapeze support member 146.

The trapeze bar 144 is attached to the flexible trapeze support member 146. The flexible trapeze support member is supported by means for supporting the mountain climber's trapeze.

In a preferred embodiment illustrated in the drawing figures the means for supporting the mountain climber's trapeze is a support assembly 148. In a preferred embodiment illustrated in the drawing figures the support assembly includes a hook 150 attached to a housing 152 with suitable attachment members, for example, threaded nut 154.

A magnet 156 for supporting the mountain climber's trapeze support assembly is located within the housing 152. The magnet 156 is preferably a ceramic magnet strong enough to support the weight of the mountain climber's trapeze support assembly, the trapeze and at least one poseable toy figure 10 when the magnet 156 is on the surface of a metallic material.

The trapeze bar flexible support member 146 has a disk 158 or other suitable member located at another end of the member 146 to keep the flexible support member from sliding completely through the hook 150. The trapeze bar 144 is connected to the flexible support member as illustrated in FIG. 19.

The structure of the mountain climber's trapeze set 100 is constructed so that its parts 82 interact with the means for grasping of the poseable toy 10 whether by grasping as in the trapeze bar 144 or as in the ability to place the flexible support member through the means for grasping to simulate mountain climbing by the toy 10. In one preferred embodiment the

members 82 of the mountain climber's trapeze set 100 have a diameter of approximately .1875 inches (for example the trapeze bar) or another diameter suitable for interaction between the means for grasping and the flexible support member.

Another mountain climbing accessory 98 includes a pulley assembly and gondola or cable car 102 which can be supported by the same type of flexible cord member 104 as used in the mountain climber's trapeze 100 and long enough to represent and function as the cable for the gondola or cable car. The preferred embodiment of the combination includes a pulley assembly 106 and a gondola or cable car 108 for use with one or more poseable toys 10 of the present invention.

The flexible cord 104 may be supported at its ends by either the mountain climber's trapeze support assembly 148 illustrated in FIG. 19 or means for supporting an accessory as embodied in the supporting hook assembly 160 illustrated in FIG. 20.

When using the magnet 156 for supporting the pulley assembly and gondola or cable car 102 the magnet 156 is preferably a ceramic magnet strong enough to support on a metallic surface the combined weight of the combination pulley assembly and gondola or cable car and at least one poseable toy figure 10.

The pulley assembly 106 includes a pulley 162 supported for rotation on an axle member 164. In a preferred embodiment the pulley is a loose pulley, thereby allowing axle member 164 to be rigidly attached to gondola support members 166.

The gondola or cable car 108 includes a gondola support framework 168 and a seat member 170 preferably of a flexible material. It will be seen in the preferred embodiment illustrated in FIG. 21 that the gondola support framework includes a poseable toy figure support bar 172.

The structure of the pulley assembly and gondola or cable car assembly combination is constructed so that various of its parts 82 interact with the means for grasping. In one preferred embodiment the members 82 have a diameter of approximately .1875 inches.

As previously mentioned the toy 10 and the means for covering or cladding the framework includes means for representing pigment and clothing. Baseball-style caps 112 may be provided to complete the clothing of the mountain climbing embodiment of the present invention and the baseball-style caps will be sized to fit snugly, but not permanently, upon the top of the head portion 36.

Another accessory is illustrated in FIG. 22. The poseable toy figure 10 may carry one

or more suitably sized drawstring bags **110** or the drawstring bags may be used (with a suitable weight within the bag) with an accessory to counter balance the weight of a toy **10** used with the accessory.

In a preferred embodiment the drawstring bag **110** has a drawstring member **184**. The drawstring member in a preferred embodiment is sized so as to fit within the means for grasping of the toy **10** whether or not it is actually held within the means for grasping as are members **82**.

In use, in connection with the accessories previously mentioned to enhance the play possibilities of the poseable toy **10** and the associated accessories, the poseable toy is capable of being manipulated into a variety of poses. The poseable toy figure **10** remains in its posed position after manipulation due to the interior means for articulating **12**.

In the preferred embodiment described and illustrated the means for articulating is provided by the wire armature **14**. The wire armature, as shown in FIG. 2, extends into the limbs of the human-like poseable toy figure **10** but not the fingers of sculptured hands and, therefore, the means for grasping.

The lack of wire armature **14** and therefore articulation within the fingers in combination with the injection molded plastic of the means for covering or cladding provides the means for grasping residing in the construction of the fingers. In this way the present invention enables the fingers **42**, **48** to spring back to the molded position after being released from a flexed position.

The present invention is intended to use one or more of the accessories **80** in combination with one or more poseable toy figure **10**. Therefore, the accessories are intended to interact with the means for grasping and to have at least one predetermined dimension **82** complimentary to the as-molded position of the grasping fingers.

In addition to poseability, the poseable figure **10** can be positioned such that it is capable of standing upright on a horizontal surface and outward from a vertical metallic surface as illustrated in FIGS. 25 through 32 (both right side up and upside down). The complimentary accessories **80** are also capable of being removably attached to both vertical and horizontal surfaces (both right side up and upside down), for example, by magnets or suction cups in the same fashion as the magnets or suction cups illustrated in the drawing figures and described herein.

In a preferred embodiment the firefighter accessory set **84** is not entirely realistic,

rather the accessories are intended to provide props for imaginative play. This is the case for each accessory set, whether or not illustrated and described, therefore, the firefighter set as well as any other accessory set is intended to be realistic enough to support imaginative play but not so realistic as to inhibit a child from mixing up the accessories from two or more sets and still find stimulation for imaginative play.

In one preferred embodiment the safety net is intended to be used either grasped by one or more toys or standing by itself on the legs provided. Similarly, the stretcher is constructed to allow two toy figures 10 to carry another toy figure.

The stretcher is assembled from two (2) 0.1875 inch diameter wires painted to represent wooden poles. The stretcher is a suitable cloth supported by the wires representing the two wooden poles.

The safety net with its trampoline supported by the framework and legs can be spandex or a similar stretchy material. The rim and legs are preferably either steel or heavy plastic which are powder coated or injection molded (the plastic can be pigmented for extra attraction to children).

In a preferred embodiment the ladder accessories are in pairs. The top ladder has magnets 174 for supporting the topmost of a pair of ladders as illustrated in FIG. 24. A pair of metal sleeves 176 are provided to connect the two ladders.

The fire tower 92 in a preferred embodiment has the same dimensions as the gondola or cable car accessory that was described in connection with the mountaineer accessory set 98. The mountaineer accessory set 98 has similar play-friendly features as those described for the firefighter accessory set.

In one embodiment the poseable toy figures 10 are intended to represent mountain climbers or mountaineers to children. The mountaineer accessory set is intended to represent rather than reproduce real climbing equipment in order to stimulate a child's imagination.

The accessories in the mountaineer accessory set are intended to have a number of uses. The hook and magnet combination 148 or the supporting hook assembly 160 with its suction cup 178 and hook 180 supported by the suction cup can be used to hold the cord for the gondola or cable car.

The cable car pulley assembly 106 can be used as a separate fun-ride assembly 182 as illustrated in FIG. 29. In this embodiment the gondola support member 172 provides a poseable toy support bar 186 and the dimensioned member 82 graspable by the means for

grasping of the toy 10.

The magnets can be used to hold the pulley and another cord used to hoist the gondola. It will be understood that the magnets and suction cup members can be used in numerous combinations to hold these and other accessories off the ground when attached to the surface of a metallic material or a non-metallic surfaces.

The pulley assembly 106 also referred to as the fun ride assembly has multiple uses. It can be used as previously described or it can be turned upside down and act as a simple pulley to hoist the gondola, a figure or another assembly.

In a preferred embodiment, the poseable toy is approximately 5.375 inches tall. This dimension can shrink after manufacture.

The accessories are preferably sized according to the size of the poseable toy figure 10. In one preferred embodiment, the ladder 90 will be approximately 11.0 inches long and 2.0 inches wide.

Similarly, in one preferred embodiment the fire tower 92 is approximately 6.0 inches high, 4.0 inches wide and from 2.5 to 3.0 inches deep. The safety net 88 is approximately 7.0 inches wide and 2.5 inches high and the support poles of the stretcher 86 are approximately 8.0 inches long and the stretcher supported by the poles is approximately 6.0 inches long.

The gondola 108 is approximately 3.5 inches wide, 2.0 inches deep and 6.5 inches high and the pulley assembly 106 is measures approximately 3.0 inches from the center of the pulley to the cross bar 186 in one preferred embodiment. Similarly, the trapeze bar 144 is approximately 2.0 inches wide and depends approximately 3.0 inches from its attachment to the cord 146 while the disk 158 is approximately 1.25 inches in diameter with an opening approximately 0.1875 inches in diameter.

The installation of the magnet within its respective bracket within the opening in the respective foot portion is illustrated in FIG. 33. The bracket 59, 69 fits within the opening 56, 66.

The bottom surfaces 188, 190 of the combination foot and bracket define a surface contact plane 192. The magnet 58, 68 is located in its respective bracket with a gap 194 all around the magnet and another gap between the exposed surface of the magnet 196 and the surface contact plane 192.

The magnet should not touch the sides of the bracket and it is believed that contact between the sides of the magnet and the sides of the respective bracket may have a negative

effect on the ability of the magnet to support the toy 10 as desired and described herein.. In a preferred embodiment the gap between the magnet and the bracket and the bottom surface of the magnet and the surface contact plane is between approximately .003 and .008 inches.

In a preferred embodiment, the predetermined diameter of the graspable structure of the accessories is approximately 0.1875 inches in diameter. This will include the cord or cords used throughout to support the toy or toys or accessory or accessories.

Preferably, the magnets are ceramic bar magnets and the sheet metal brackets are galvanized metal. The exposed end of the accessory member will be covered with suitable end caps, for example rubber end caps located over the ends.

The drawings illustrate one or more ladders 90 capable of being interconnected with other ladders 90, the one or more ladders 90 having a combination of one or more rungs and one or more legs with a diameter of approximately 0.1875 inches, and one or more angled magnets such that the ladder 90 is capable of being magnetically attached to a metallic surface to support the ladder.

In alternate embodiments, the accessories 80 may be complimentary with other occupations and avocations. Alternatively, the toys 10 can be used separate from the accessories.

While specific embodiments have been shown and described, many variations are possible. The particular dimensions may be changed as desired to suit the specific application or the materials may be modified or substituted or other accessories may be provided.

The means for articulating and posing the toy 10 is preferably a plurality of approximately .041 inch diameter 302/304 annealed stainless steel wires welded together at the joints illustrated in FIG. 1. The accessory members are preferably welded together or glued together depending upon the materials used to construct the particular accessory.

The means for covering or cladding the toy and the hat or hats for the toy are preferably a PVC having an 80-85 Shore 'A' Hardness. In a preferred embodiment the PVC has a maximum 15% permissible re-grind.

The magnets are preferably ceramic 5 or 8 block magnets approximately .700 inches long, .240 inches wide and .200 inches thick. These magnets are 100% saturated with a strength of approximately 3800 to 3850 Gauss.

The magnet brackets are preferably .020 inch thick galvanized sheet metal. The bracket preferably has a finish that is a .0005 inch Nickel flash plating finish.

Alternative embodiments of the internal framework are illustrated in FIGs. 1 and 2. The solid line illustrates the preferred embodiment.

From the foregoing description those skilled in the art will appreciate that all of the objects of the present invention are realized. An improved poseable toy figure utilizes an internal frame construction in combination with a specifically designed covering or cladding having shape memory supported by or proximate to the internal frame construction and that portion of the toy not supported by the internal frame construction can be constructed such that it returns to its previous position after manipulation.

The poseable toy figure has upper extremities that are provided with a capability of holding or grasping objects. The means for grasping allows the toy to be used in combination with one or more accessories.

The poseable toy is capable of standing generally upright (subject to the then current pose and the relationship between the center of gravity and the means for stabilizing) on a horizontal surface such that the toy figure does not need external supports or a stand to maintain the toy figure in a generally upright position either during use or storage. An additional means for attaching and supporting the toy figure is provided by using means for magnetically attaching the toy to a metallic surface no matter what pose in which the toy is positioned, whereby the capability of magnetic attachment is accomplished by providing magnets in an assembly that is received within a cavity provided by the construction of the foot portions of the lower extremities or limbs.

The magnets may have different polarities which allows connection of a plurality of toys or accessories by varying the combination of polarities. The toys are also provided within a variety of pigmentation schemes to represent clothing and gender.

Having described the invention in detail, those skilled in the art will appreciate that modifications may be made of the invention without departing from its spirit. Therefore, it is not intended that the scope of the invention be limited to the specific embodiments described, rather, it is intended that the scope of this invention be determined by the appended claims and their equivalents.

What is claimed is:

1 1. A poseable toy figure comprising:
2 means for articulating a toy figure;
3 means for covering the means for articulating the toy figure;
4 the toy figure including means for grasping, whereby the toy figure grasps an object or
5 another toy figure;
6 means for stabilizing the toy figure, whereby the toy figure is capable of standing
7 without external support; and
8 means for securing the toy figure, whereby the toy figure removeably attaches to a
9 surface complementary to the means for securing.

1 2. A poseable toy figure as set forth in claim 1 wherein the means for articulating
2 the toy figure is a preassembled fabricated wire armature.

1 3. A poseable toy figure as set forth in claim 1 wherein the means for covering is a
2 one piece injection molded plastic cladding.

1 4. A poseable toy figure as set forth in claim 1 wherein the means for covering is a
2 material having shape memory.

1 5. A poseable toy figure as set forth in claim 1 wherein the means for grasping
2 includes at least one sculptured hand portion having at least one grasping finger, the grasping
3 finger flexible between an open position and a closed position, the grasping finger of a material
4 having a shape memory, whereby the grasping finger returns to its molded position when
5 allowed to relax thereby allowing the grasping finger and the hand portion to cooperate so as to
6 grasp and hold the object or another toy figure.

1 6. A poseable toy figure as set forth in claim 1 wherein the means for stabilizing
2 includes one or more foot members, the foot members having a sufficient surface area that the
3 poseable toy figure stands on a surface.

1 7. A poseable toy figure as set forth in claim 1 wherein the means for stabilizing
2 includes one or more foot members and at least one foot member includes a cavity for
3 receiving the means for securing the toy figure.

1 8. A poseable toy figure as set forth in claim 1 wherein the means for securing
2 includes a magnet and the means for stabilizing includes one or more foot members and at least
3 one foot member includes a cavity for receiving the magnet for securing the toy figure to an
4 appropriate metallic surface.

1 9. A poseable toy figure as set forth in claim 1 wherein the means for securing
2 includes a magnet and the means for stabilizing includes a plurality of foot portions, at least
3 two foot portions having cavities for receiving their respective magnets for securing the toy
4 figure, at least two magnets having opposite polarity, whereby the magnets and the associated
5 foot portions are attracted.

1 10. A poseable toy figure as set forth in claims 1 wherein the means for securing is
2 at least one ceramic bar magnet in combination with a first galvanized sheet metal bracket.

1 11. A poseable toy representing a human-like figure, the poseable toy comprising:
2 a wire armature comprising a body portion, a neck/head portion connected to the body
3 portion, a first arm/hand portion connected to the body portion, a second arm/hand portion
4 connected to the body portion, a first leg/foot portion connected to the body portion, and a
5 second leg/foot portion connected to the body portion;
6 a one-piece injection molded plastic skin covering the preassembled wire armature, the
7 one piece injection molded plastic skin having a body portion, a neck portion, a head portion, a
8 first arm portion, a first sculptured hand portion having a first grasping finger, a second arm
9 portion, a second sculptured hand portion having a second grasping finger, a first leg portion,
10 a first foot portion having a bottom surface with a recessed area, a second leg portion, and a
11 second foot portion having a bottom surface with another recessed area, the one piece
12 injection molded plastic skin having shape memory properties such that it would return to its
13 initial configuration after being posed but for the articulation allowed by the preassembled wire
14 armature;

15 means for grasping including the first grasping finger in combination with the first
16 sculptured hand portion of the one piece injection molded plastic skin, and the second grasping
17 finger in combination with the second sculptured hand portion of the one piece injection
18 molded plastic skin, the first arm/hand portion and the second arm/hand portion of the
19 preassembled wire armature not extending into either the first or the second grasping finger,
20 whereby the shape memory properties of the one piece injection molded plastic skin allow the
21 first and the second grasping fingers to return to their initial partially closed position after
22 being flexed into an open position so as to allow the poseable toy to grasp objects of a
23 predetermined size with either the first hand portion or the second hand portion;

24 means for stabilizing including the first foot portion and the second foot portion of the
25 one-piece injection molded plastic skin in combination with the first leg/foot portion and the
26 second leg/foot portion of the preassembled wire armature, both the first foot portion and the
27 second foot portion providing sufficient contact surface area such that the poseable toy is
28 capable of standing upright after being manipulated into a position whereby the poseable toy
29 center of gravity is in balance relative to the first foot portion and the second foot portion; and

30 means for securing including a first magnet capable of being received within the recess
31 of the bottom surface of the first foot portion, and a second magnet capable of being received
32 within the recess of the bottom surface of the second foot portion, the first and the second
33 magnets capable of securing the poseable toy to an appropriate metallic surface.

1 12. A poseable toy as set forth in claim 11 wherein the first magnet and the second
2 magnet have opposite polarity, whereby the first foot portion is attracted to the second foot
3 portion.

1 13. A poseable toy as set forth in claim 11 wherein the first magnet is a first
2 ceramic bar magnet in combination with a first galvanized sheet metal bracket, and the second
3 magnet is a second ceramic bar magnet in combination with a second galvanized sheet metal
4 bracket.

1 14. A poseable toy as set forth in claim 11 further comprising means for
2 representing pigment and clothing, whereby representation of pigment and clothing create
3 distinctions between poseable toys.

1 15. A poseable toy as set forth in claim 11 further comprising painted markings
2 capable of distinguishing features suggestive of gender.

1 16. A poseable toy as set forth in claim 11 further comprising painted markings
2 capable of distinguishing features suggestive of occupation, avocation or recreational activity.

1 17. A poseable toy as set forth in claim 11 further comprising at least one
2 accessory, the one accessory having a portion with a dimension of a predetermined size,
3 whereby the means for grasping is capable of grasping the accessory.

1 18. A poseable toy as set forth in claim 17 wherein the accessory includes an item
2 used by a firefighter selected from the group consisting of a stretcher, safety net, ladder, fire
3 tower, fire tower support assembly, fire hose and fireman's helmet.

1 19. A poseable toy as set forth in claim 17 wherein the accessory includes an item
2 used by a mountain climber selected from the group consisting of a trapeze, trapeze support
3 assembly, cord, cord support member, gondola, gondola support assembly, funride and pulley
4 combination, drawstring bag and cap.

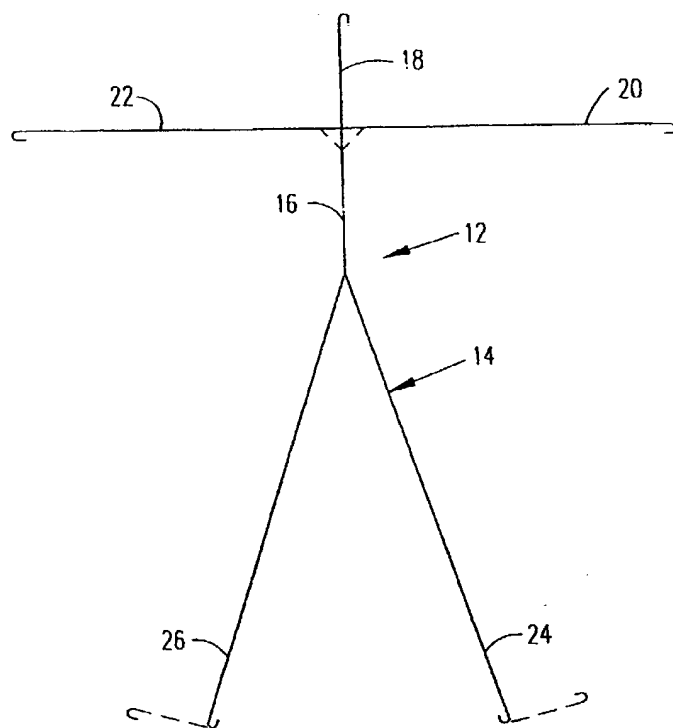


FIG. 1

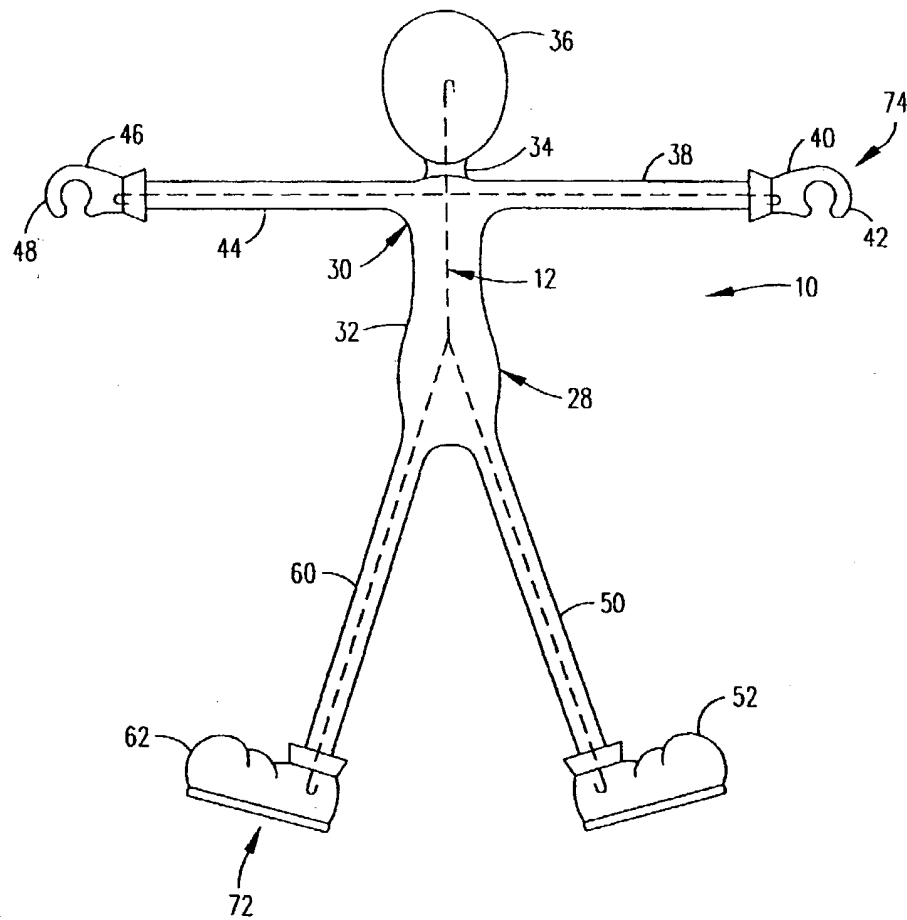


FIG. 2

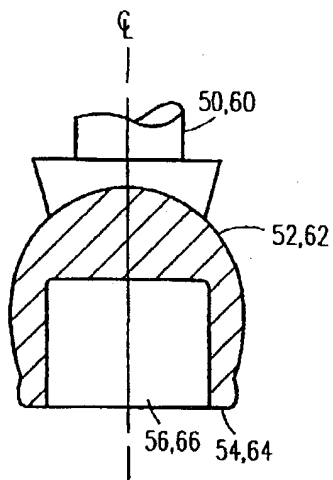


FIG. 4

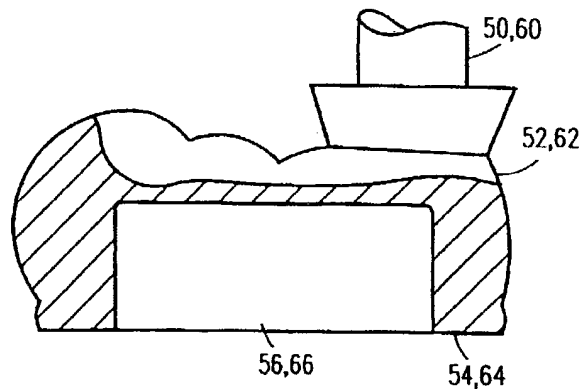


FIG. 5

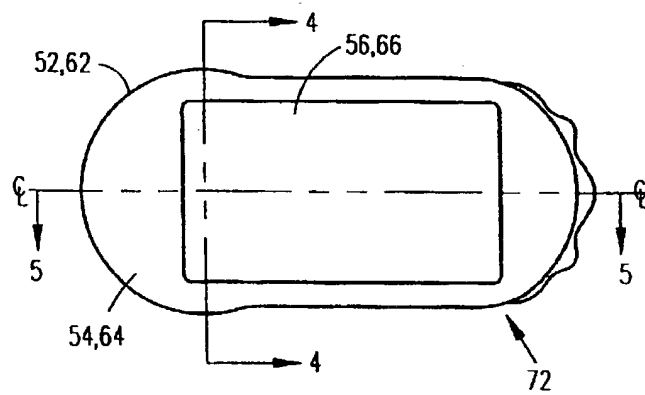


FIG. 3

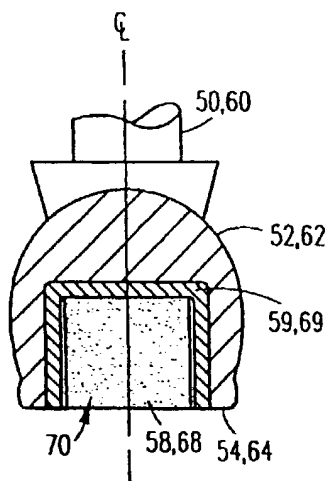


FIG. 7

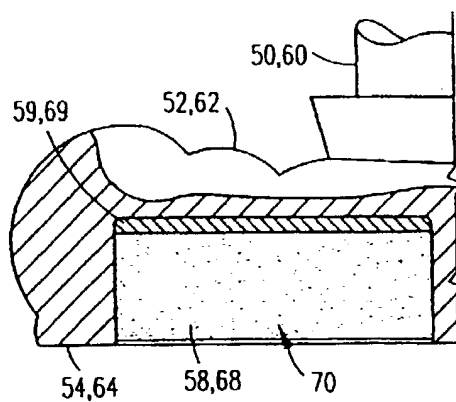


FIG. 8

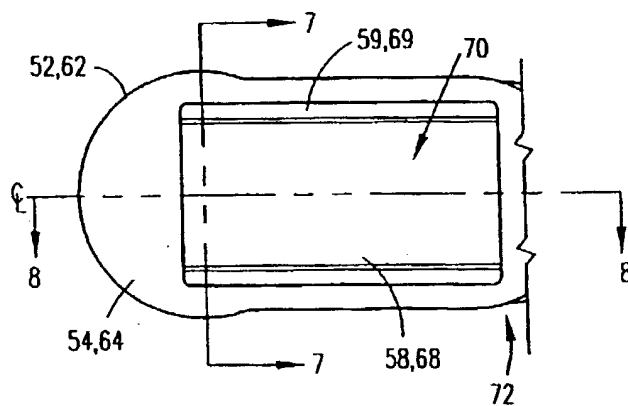


FIG. 6

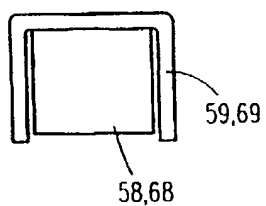


FIG. 11

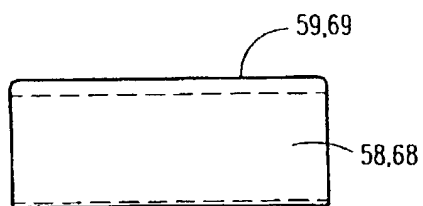


FIG. 10

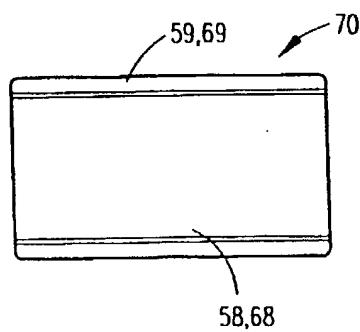


FIG. 9

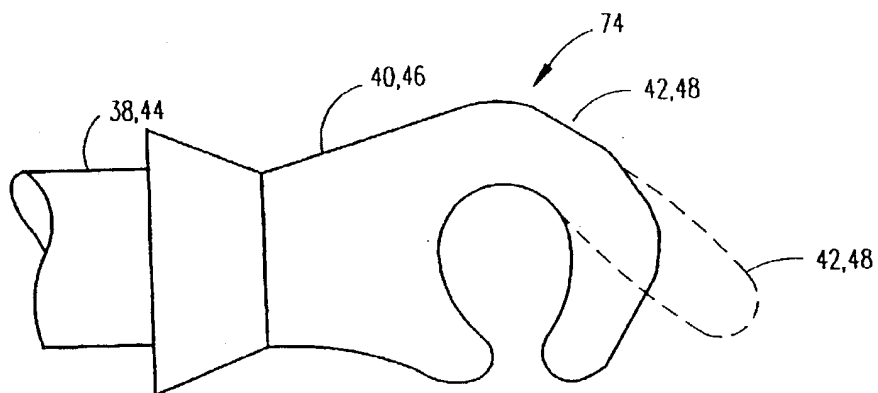


FIG. 12

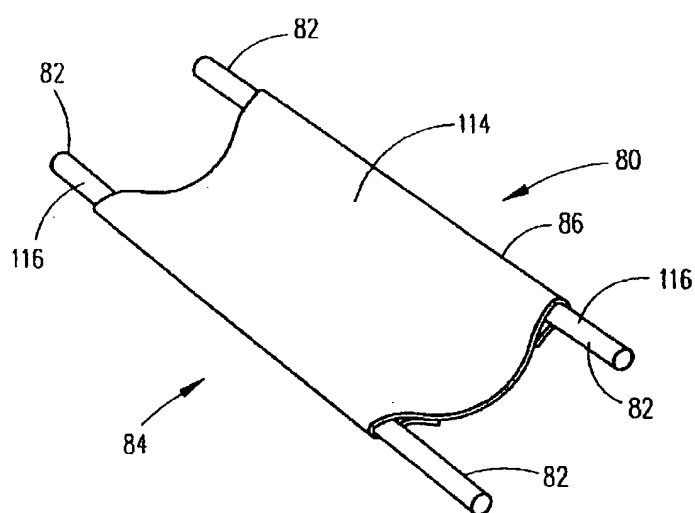


FIG. 13

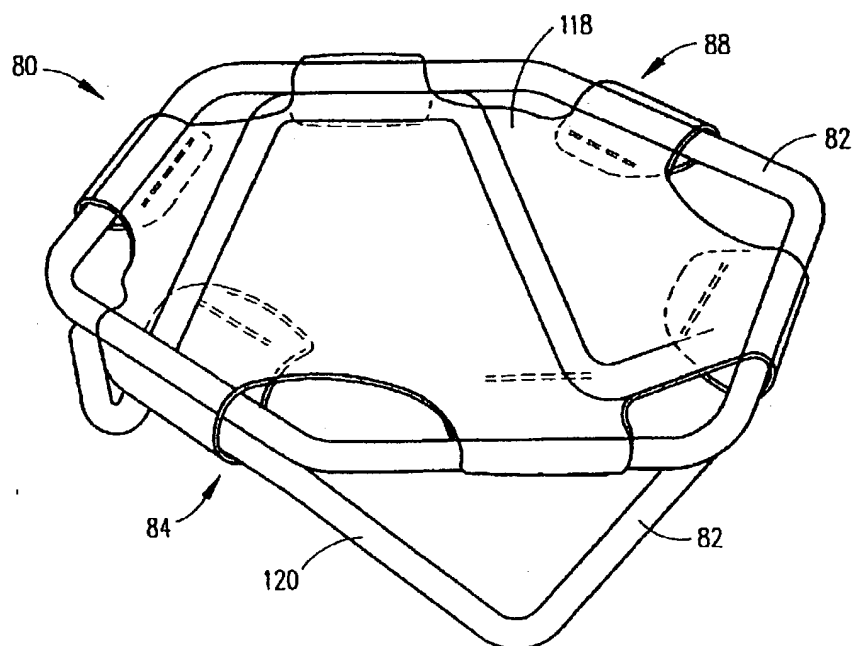


FIG. 14

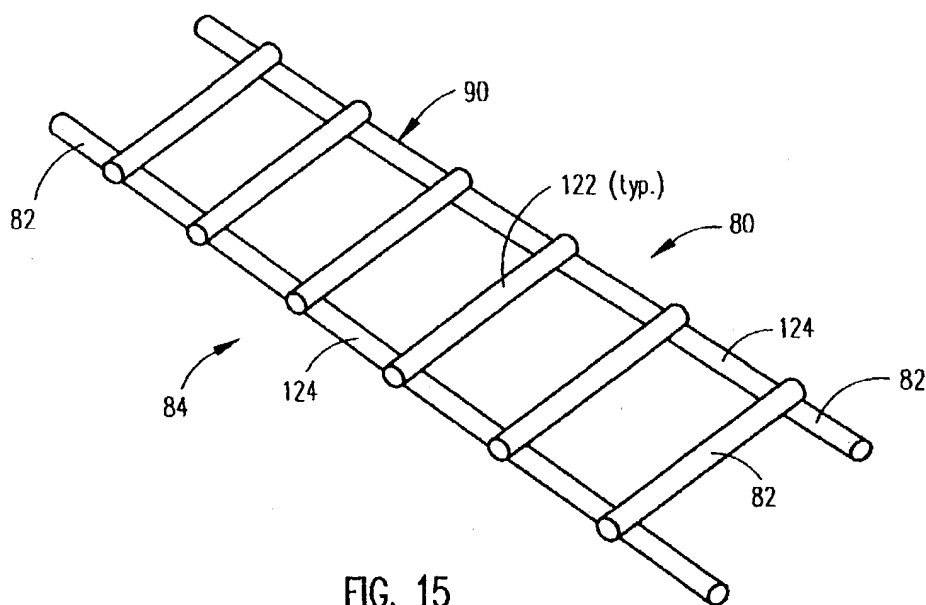


FIG. 15

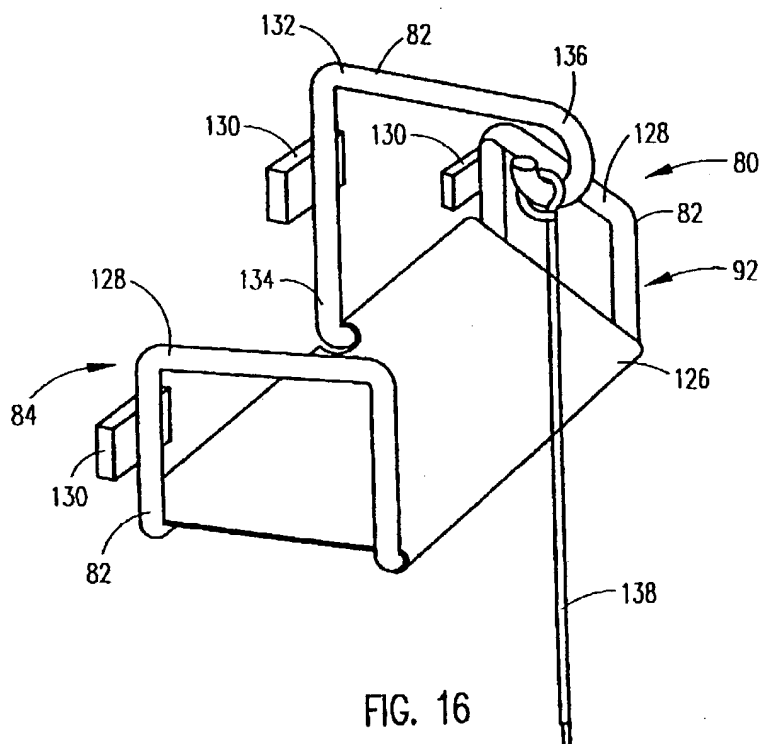


FIG. 16

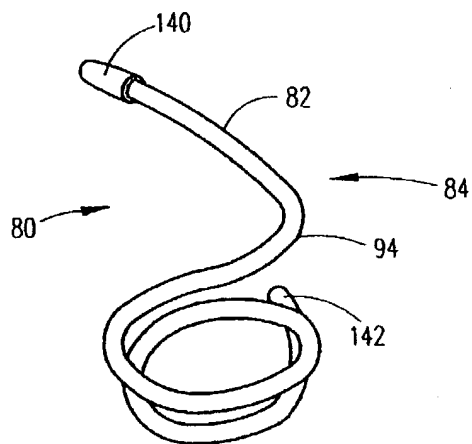


FIG. 17

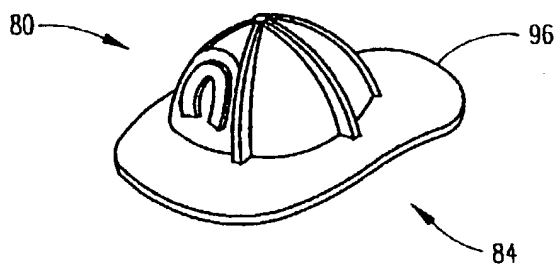
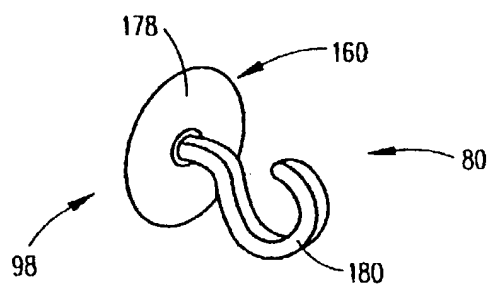
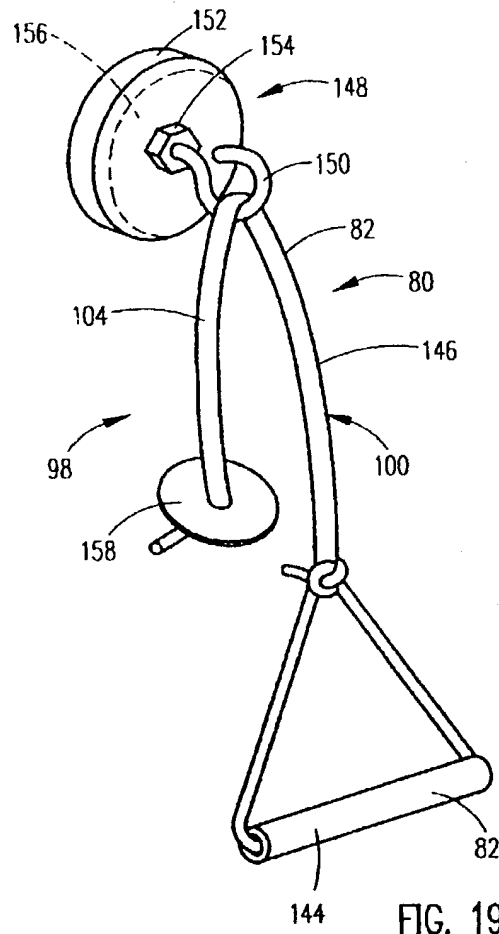


FIG. 18



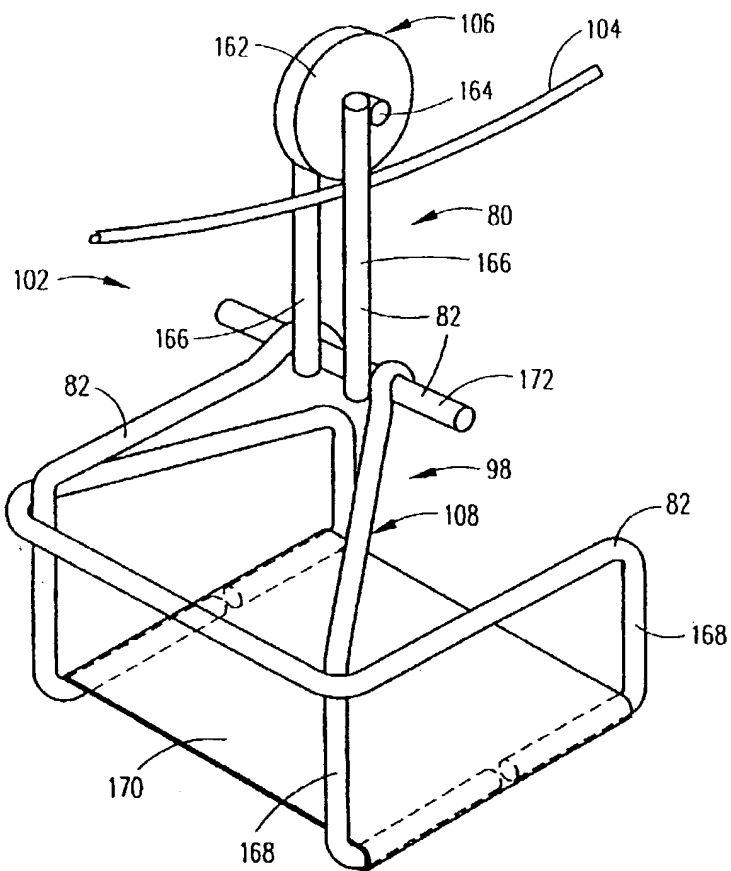


FIG. 21

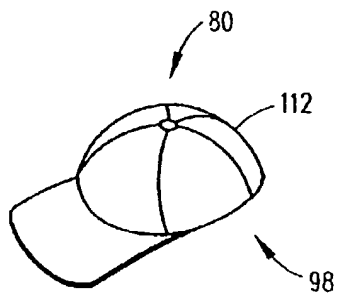


FIG. 23

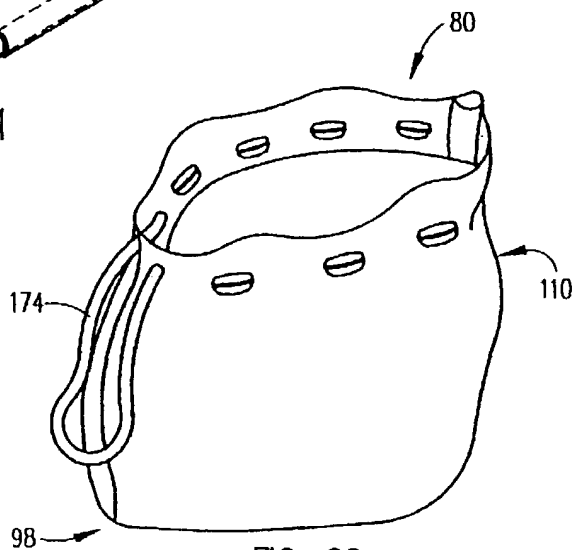
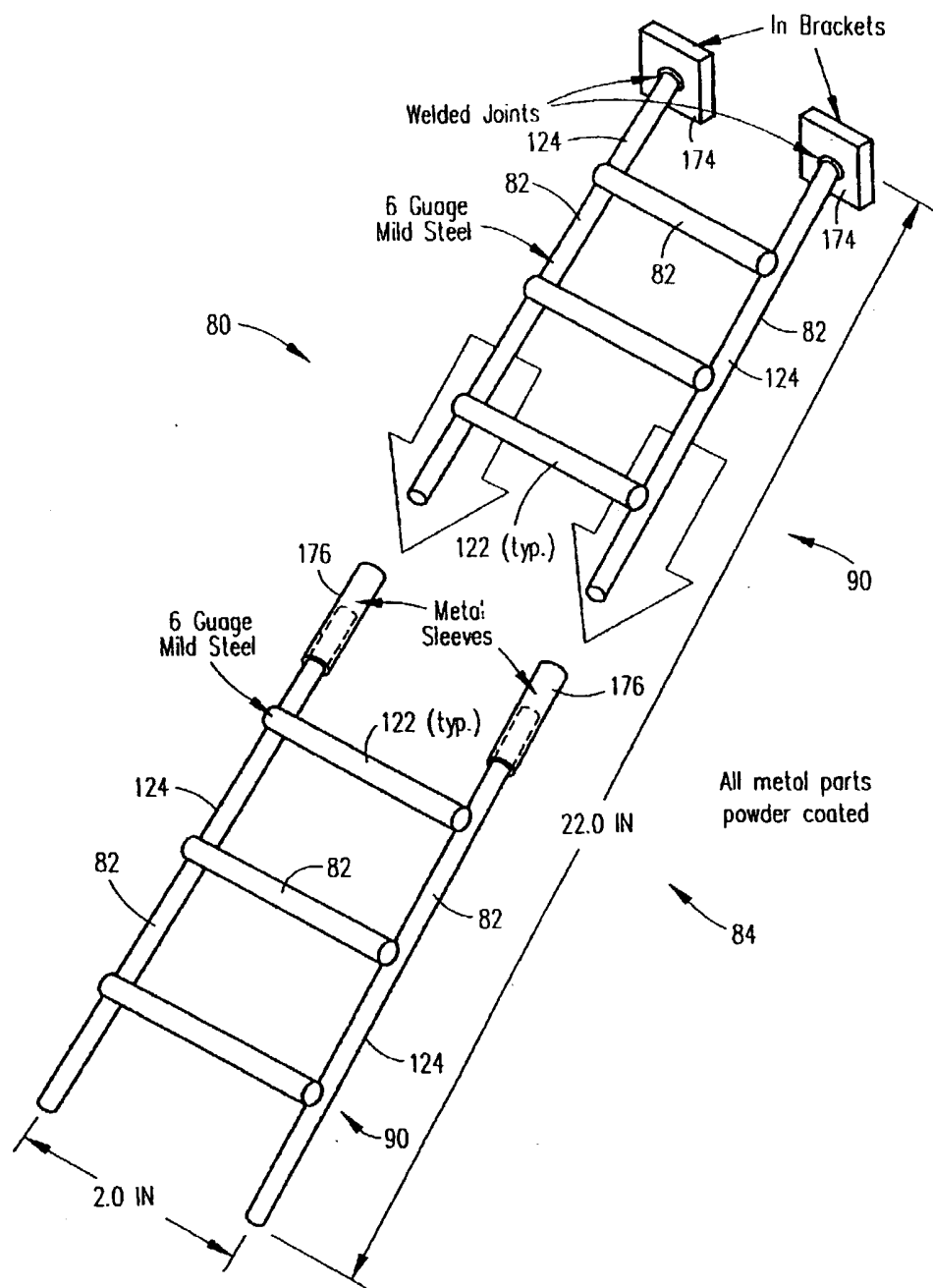


FIG. 22



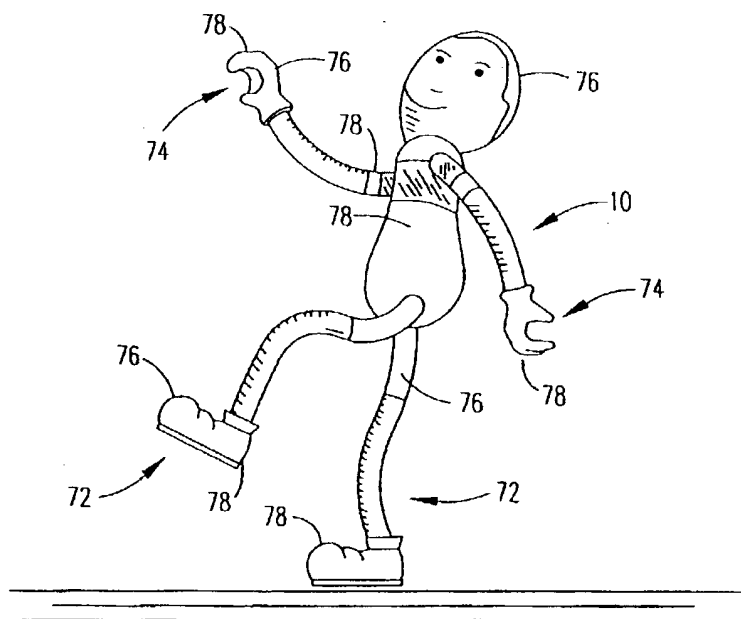


FIG. 25

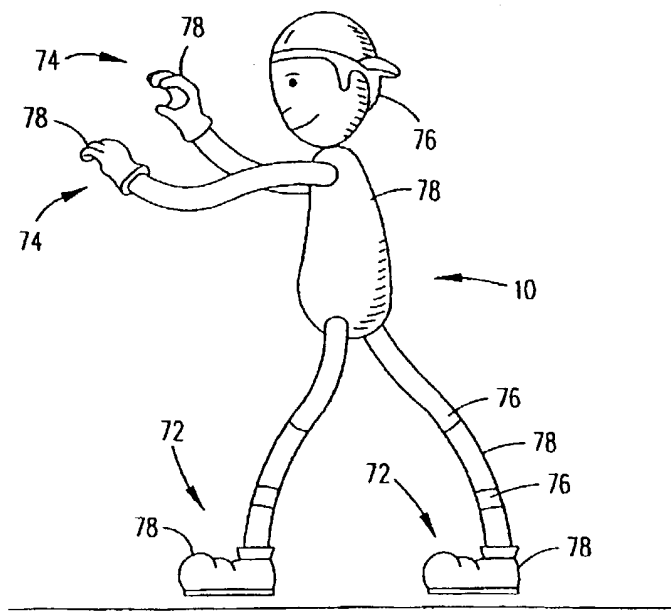


FIG. 26

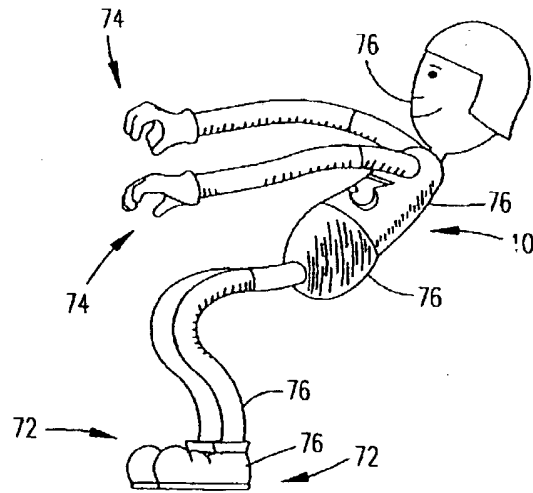


FIG. 27

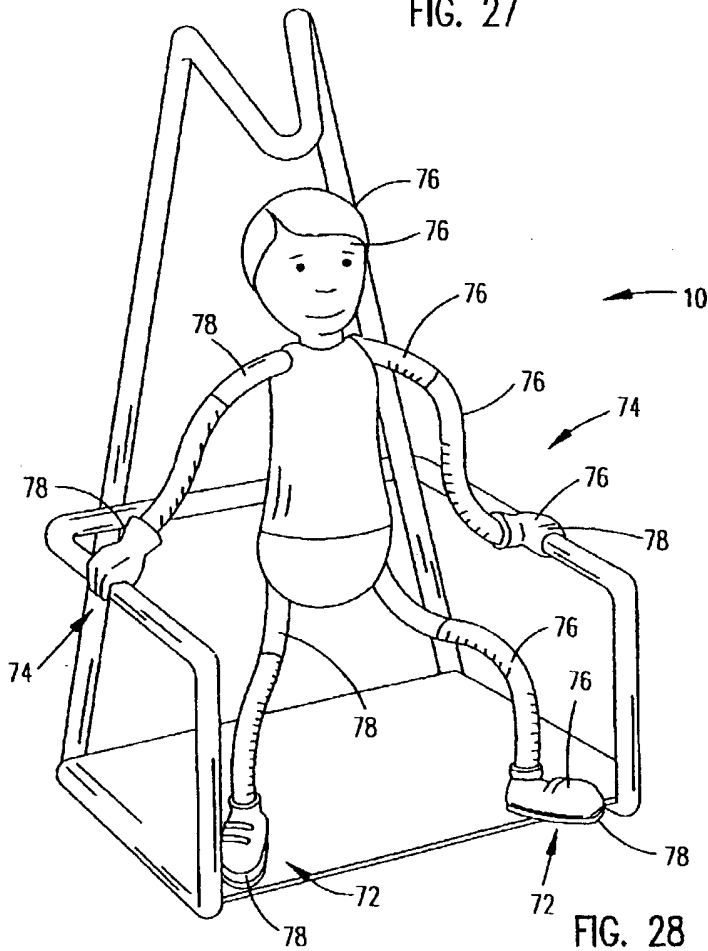


FIG. 28

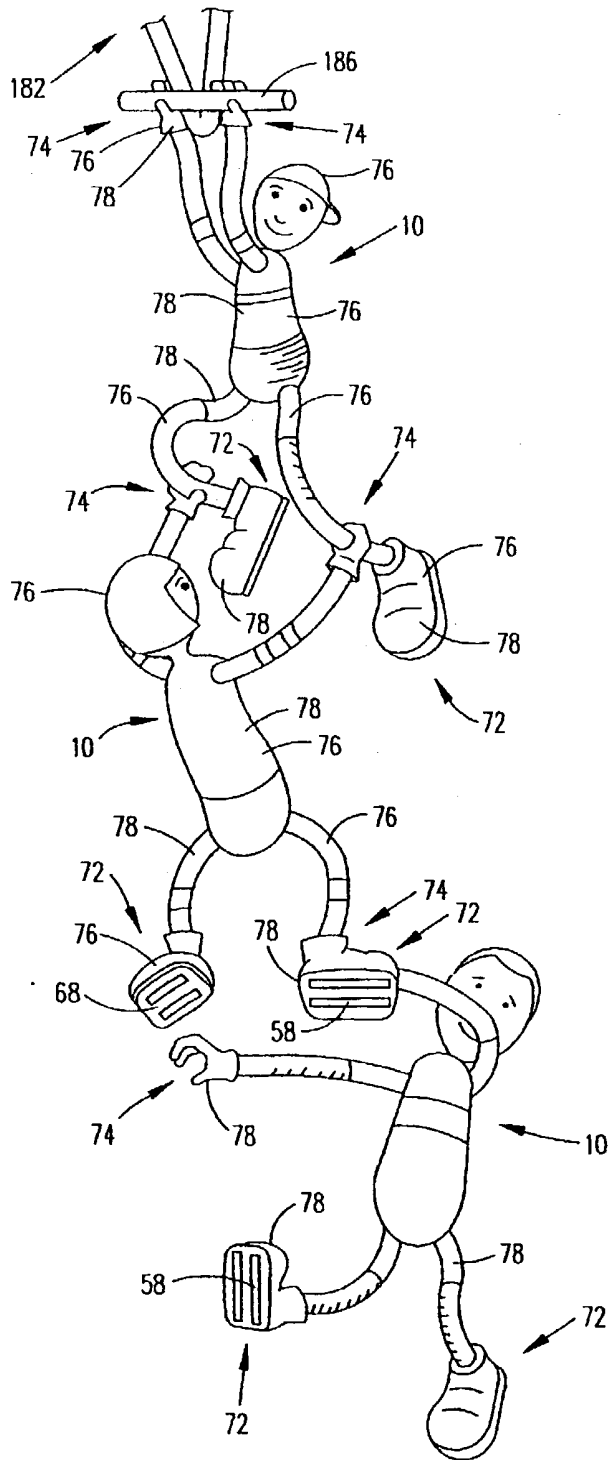


FIG. 29

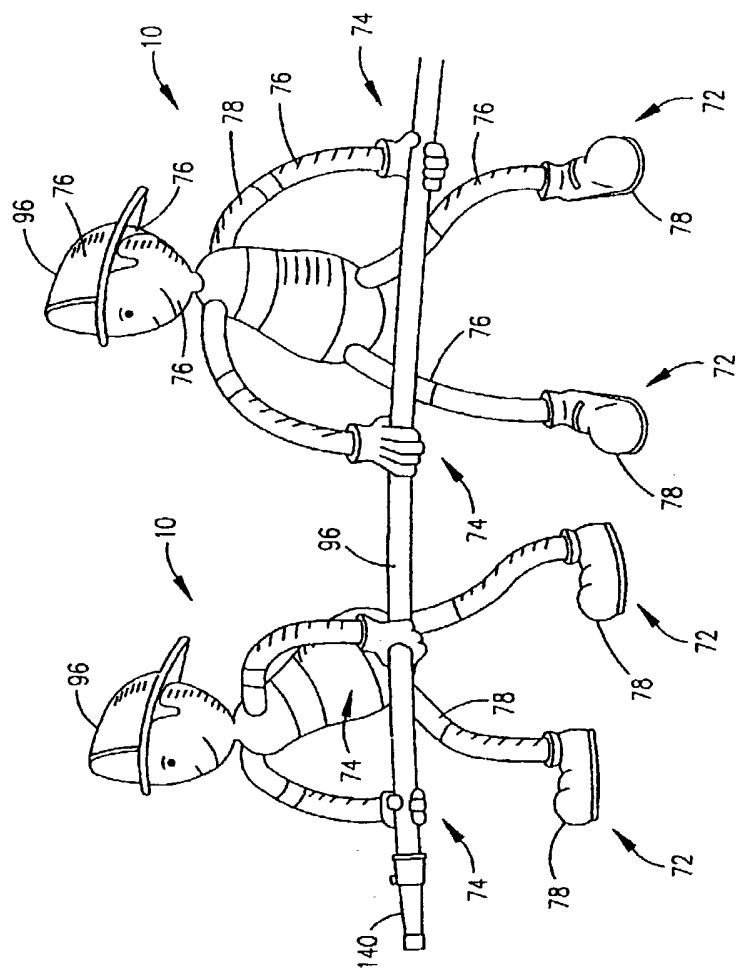


FIG. 30

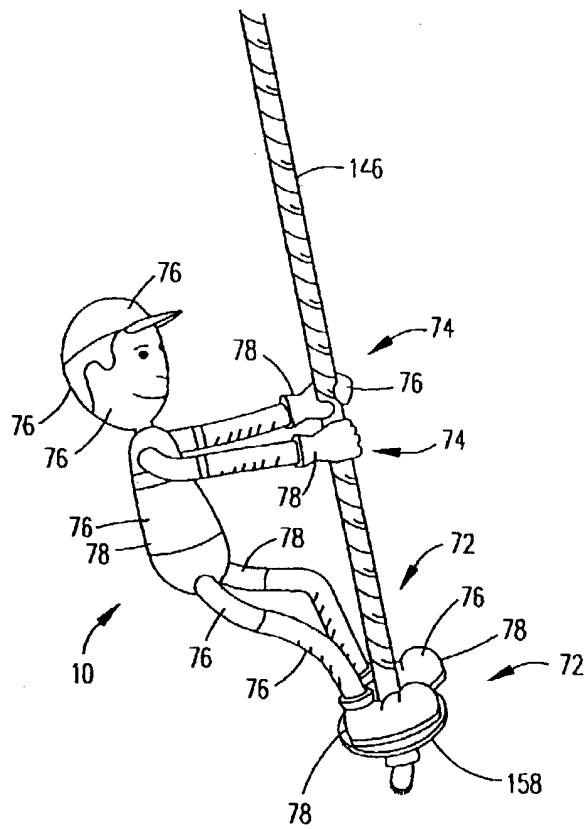


FIG. 31

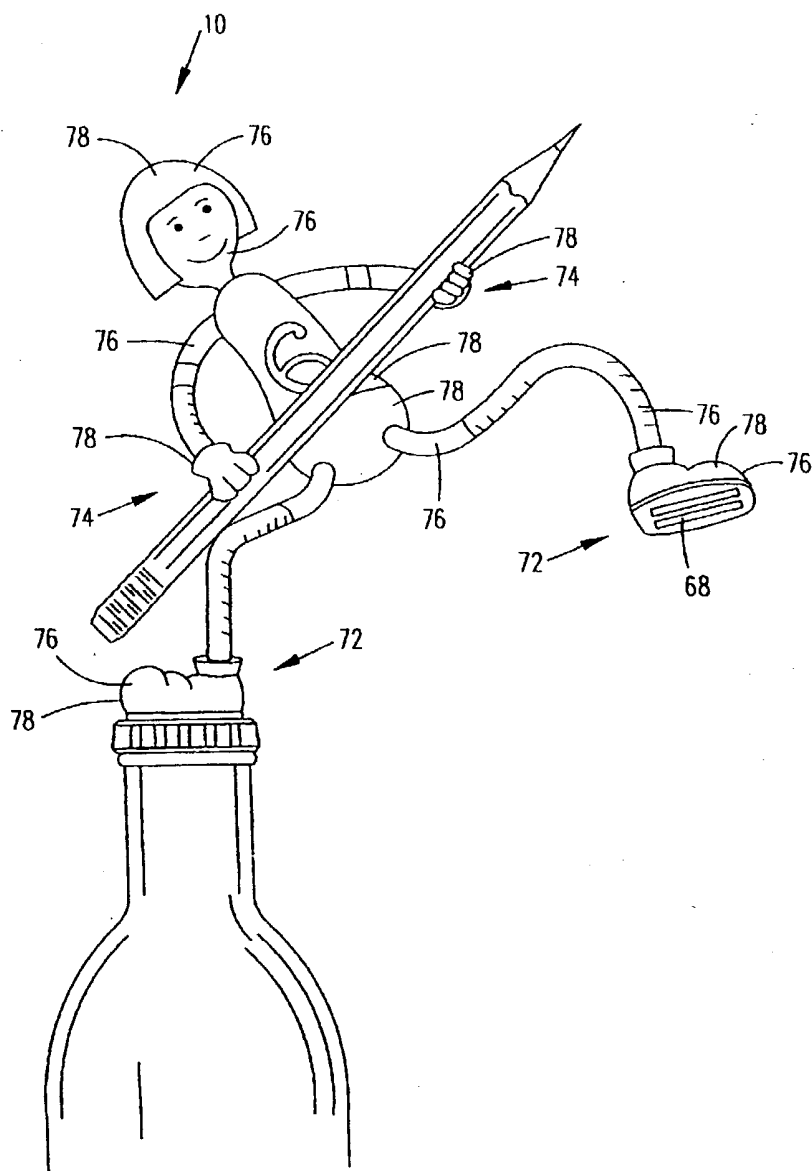


FIG. 32

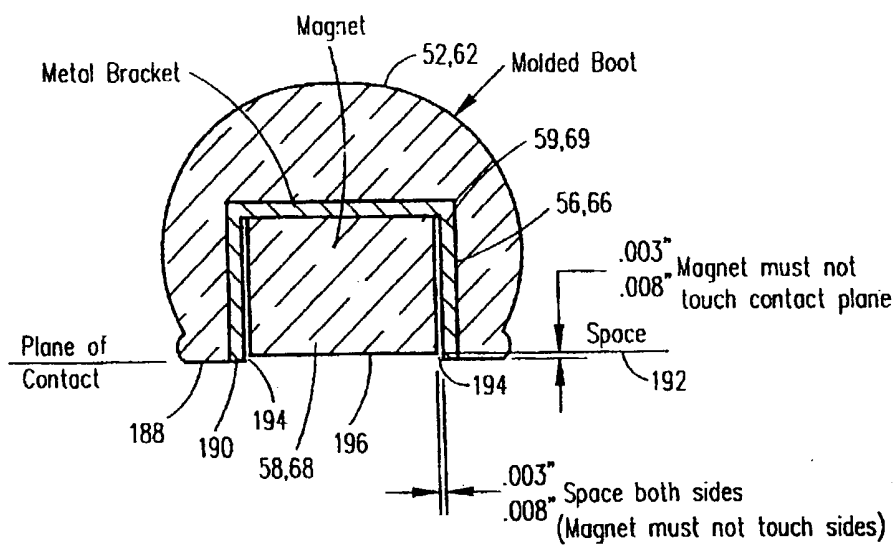


FIG. 33

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US98/08237

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : A63H 3/04, 3/36, 33/26

US CL : 446/139, 374, 390

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 446/139, 374, 390

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3,325,939 A (RYAN et al) 20 June 1967, see entire document.	1-8
Y		9-19
Y	US 2,884,739 A (KETCHAM) 05 May 1959, see entire document.	1-19
Y	GB 656,087 A (SCHLEICH) 08 August 1951, see entire document.	1-19
A	US 2,959,888 A (NOBLE) 15 November 1960, note shape memory hands for grasping accessories (15, 25).	1-19
A,P	US 5,630,745 A (YEH) 20 May 1997, note internal frame.	1-19

☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

* Special categories of cited documents:	* T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
* A* document defining the general state of the art which is not considered to be of particular relevance	* X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
* E* earlier document published on or after the international filing date	* Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
* L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	* A* document member of the same patent family
* O* document referring to an oral disclosure, use, exhibition or other means	
* P* document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

19 MAY 1998

Date of mailing of the international search report

03 JUN 1998

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Authorized officer

LAURA FOSSUM

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 SPECIAL PROGRAM EXAMINER
 GROUP 3200

Telephone No. (703) 308-2678

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/08237

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,362,271 A (BUTT) 08 November 1994, note complementary magnetic means (14).	1-19
A	GB 1,571,352 A (NEWFELD) 16 July 1980, note foamed rubber latex material (18) over the flexible wire skeleton (10).	1-19